

**Work Order ID 73127**

Friday, August 26, 2011 6:32:18 AM



Page 1

Item ID: D206-642-541

Accept



Setup Start



Revision ID:

Stop



Item Name: Replacement Skidtube

Start Date: 8/26/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 9/9/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

*mf*

Date:

*11-08-29*

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

Draw Nbr

Revision Nbr

D3274

D

1114-D206-642

Rev M

0.00

100



DC

DOCUMENT CONTROL

0.00

Memo

Document Control

Photocopy bluefile &amp; type labels per PPP D206-642-541 CHG003

*N/A*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
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DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

110

0.00



Skidtubes

Skidtubes

0.00

Skidtubes

**Memo**

\*\*\*\*VERIFY AND INSPECT THE MATERIAL PRIOR TO USE\*\*\*\*

1- Bend FWD end of tube using bend prog D3274 FWD and foil 10 as per dwg D3274, cut fwd end of tube with saw table setup D3274.

DD 11-9-14

2- remove fwd indexing ridge as per dwg D3274. Prepare for welding

Wh. 11/09/15

3- weld fwd cap as per dwg D3274 and OSI004

AR Aluminum Rod Batch:

M112860

BE 11/09/15

4- grind fwd cap weld on top surface only

BE 11/09/15

5- Cut AFT end of tube at 170.9" as per dwg D3274 and deburr end.

6-Drill Aft cap pilot hole using DT8025

7 -Cleco DT8025 in position and install pilot hole drill Jig DT8742A,B,C,D.  
Drill 3/16" pilot holes as per Dwg D3274

Wh. 11/09/20

8 -Remove inner indexing ridge on aft end of skidtube as per Dwg D3274 scribe batch #

9 -Open aft end cap holes to Ø0.208" as per Dwg D3274. Deburr aft end.

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Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

114

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

S uloz/20

Quality Control

116

QC10- Inspect visual per QSI004- ground welds

0.00



QC

Memo

0.00

S uloz/20

Quality Control

120

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

JW

11-09-22

Hand Finishing

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

130



QC3- Inspect Part Finish

0.00

QC

Memo

0.00

Quality Control

150



Skidtubes

0.00

Skidtubes

Memo

0.00

Skidtubes

1-Open Ø0.313" and 0.375" crossbolt spacer holes as per Dwg D3274

2-Deburr crossbolt spacer holes as per Dwg D3274 and blow out chips from inside the tube

3-Bond web in place as per Dwg D3274 &amp; QSI 015.

A/R ☐ Sikaflex-291 ☐ 118393 ☐Sikaflex expire date: ☐ 12/04/05 ☐Start: ☐ 11/09/26 ☐ Time: ☐ 1:45 ☐Finish: ☐ 11/10/26 ☐ Time: ☐ 11:30 ☐

(Adhere for 12 hours)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Customer:

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Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

160



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

DP

11-10-6

170



Skidtubes

Skidtubes

Skidtubes

0.00

Memo

0.00

1-Bend AFT end of tube using bend prog. D3274 AFT as per dwg D3274. Install drop pins in crossbolt spacer holes to maintain web position.

DP

11-10-6

2- DRILL PILOT HOLES FOR WEARPLATES USING D3274-1T2  
OPEN HOLES TO .297" . Deburr3-DRILL TOE PIN HOLE .640" DIA AS PER DWG USING DT8935 FWD  
END OF TUBE  
DEBURR INSIDE OF HOLE AS NECESSARY (DO NOT ENLARGE HOLES)  
REMOVE ANY FOREIGN OBJECTS INSIDE OF TUBES

DP

11/10/11

4- Countersink crossbolt spacer holes as per Dwg D3274

5- prepare for welding

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Customer:

Reference:

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Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

180

QC5- Inspect part completeness to step on W/O

0.00

3.060"  
4.60"

1

0

BE 11/10/12



QC

Memo

0.00

Quality Control

190

Skidtubes

0.00



Skidtubes

Memo

0.00

1-Insert D2649 & D3275-1 crossbolt spacers. Weld as per QSI 004 and Dwg D3274. Remember to back drill each hole before welding the other side. Use aluminum rod  
A/R□□Aluminum Rod□ 111788Y

3-Grind cross bolt welds flush as per Dwg D3274.

4-Counterbore 5/16" x 0.750" deep as per Dwg D3274 and deburr.

BE 11/10/12

DP 11-10-14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Required Date: 9/9/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

200

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

8/26/17

Quality Control

210

QC10- Inspect visual per QSI004- ground welds

0.00



QC

Memo

0.00

8/26/17

Quality Control

220

Pressure Wash per QSI005 4.3

0.00



HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch

NXP M-1 11/10/17

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Cust Item ID:

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Customer:

Reference:

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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

230

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Powder Coating

Memo

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

0.00

1XØ m 11/10/17

240

QC3- Inspect Part Finish

0.00



QC

Quality Control

Memo

0.00

1 BL 11-10-18.

250

HandFinishing

0.00



HandFinish

Hand Finishing

Memo

0.00

1-Install Nut Plate as per Dwg D3274. Apply LPS-3 to Nut Plate and rivets.  
A/R ☐ A ☐ LPS-3 ☐ 118596.

2-Install inserts as per Dwg D3274. Use a drop of Sikaflex inside insert holes a  
A/R ☐ ☐ Sikaflex-291 ☐ 118593 ☐  
Sikaflex expire date: ☐ 12-5.

1 BL 11-10-18.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

260

QC5- Inspect part completeness to step on W/O

0.00

*5 units*



QC

Memo

0.00

Quality Control

Inspect Nut Plate & Inserts

270

HAND FINISHING RESOURCE #1

0.00



HandFinish

Memo

0.00

Hand Finishing

1-Install wearpads & gaskets as per Dwg D3274.

2-Install ring as per Dwg D3274  
A/R ☐ Sikaflex-291 ☒ *118393*  
Sikaflex expire date: ☐ *12-5*

3-Inspect for foreign objects as per QSI 024

4-Spray inside of tube on both sides of web with LPS-3  
A/R LPS-3 Batch: *N/A*

5-Install Aft Cap and seal with Sikaflex. Clean excess adhesive.  
A/R ☐ Sikaflex-291 ☒ *118393*  
Sikaflex expire date: ☐ *12-5*

*PROCYON 114590*

*1 BR 11-10-18*

W/O:		WORK ORDER CHANGES					
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Stop

Sequence ID/  
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Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

280

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

8/10/11



Quality Control

290

Identify as per dwg & Stock Location: *PPP*

0.00



Packaging

Memo

0.00

73/20

SP 11-10-20

Packaging

300

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

11/10/24

Quality Control

11-10-20

W/O:		WORK ORDER CHANGES						
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# Picklist Print

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Work Order ID: 73127

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube



Start Date: 8/26/2011

Required Date: 9/9/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM  
IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC  
IPP Rev:F 08-06-02 add comment DD verified by:EC  
IPP Rev:G 08-10-09 revise details DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2600-1-190 		Manufactured	No			110	Each	81.4000	1	1			
Extrusion Round 3" 206													

Location	Loc Qty	Loc Code
HALL	81.4	
59874	22.4	
69622	59	

D3285-1 		Manufactured	No			110	Each	92.0000	1	1			
Cap													

Location	Loc Qty	Loc Code
LG002	92	
52511	45	
52647	47	

D3282-041 		Manufactured	No			150	Each	2.0000	1	1			
Float Web (206L/407)													

Location	Loc Qty	Loc Code
LG 70050	2	
69714	2	

① DP 11-9-14  
BEN/09/15  
Wh 11/09/20

W/O:		WORK ORDER CHANGES					
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Start Date: 8/26/2011

Required Date: 9/9/2011

Start Qty: 1.00

Required Qty: 1.00

D2649 Manufactured No 190 Each 46.0000 12 12



Cross Bolt Spacer



BE 11/10/12  
B 73857 \*12

Location	Loc Qty	Loc Code
LG	34	
68224	2	
71355	2	
72704	30	
LG001	12	
65317	1	
68507	11	

D3275-1 Manufactured No 190 Each 280.0000 12 12



Crossbolt Spacer



BE 11/10/12  
B 73393 \*12

Location	Loc Qty	Loc Code
LG	161	
72123	161	
LG002	119	
66930	106	
68946	13	

CR3212-4-03 Purchased No 250 Each 1,158.000 2 2



Cherry Rivet



BR 11-10-19.

Location	Loc Qty	Loc Code
FP-B	2	
110139	2	
ST311	1156	
114859 ✓	1156	

2

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Page 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

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Page 3

Work Order ID: 73127

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 8/26/2011

Required Date: 9/9/2011

Start Qty: 1.00

Required Qty: 1.00

D3415-041

Manufactured No

250 Each

50.0000

1

1



Nut Plate



BL 11-10-19

Location

Loc Qty

Loc Code

ST053

50

33842

6

67605 ✓

44

CCR264SS3-3

Purchased No

250 Each

459.0000

2

2



Cherry Rivet



BL 11-10-19

Location

Loc Qty

Loc Code

FP-B

2

113973

2

ST311

457

117086

31

117849 ✓

426

ALS4-1032-130

Purchased No

250 Each

1,416.000

78

78



Insert



BL 11-10-19

Location

Loc Qty

Loc Code

ST281

370

118386

370

ST282

1046

117717

54

118237

736

118312

256

\* ALS7-1032-130

78

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Page 3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Friday, August 26, 2011 6:32:14 AM

Page 4

Work Order ID: 73127

Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 8/26/2011



Required Date: 9/9/2011

Start Qty: 1.00



Required Qty: 1.00

D3536-15      Manufactured      No      270      Each      22.0000      1      1  
  
Gasket  
 BR 11-10-19.



<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP011	22	
71586 ✓	13	<u>1</u>
72881	9	

D3536-23      Manufactured      No      270      Each      18.0000      1      1  
  
Gasket  
 BR 11-10-19.

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP011	18	
43406	1	<u>1</u>
69902	5	
71579 ✓	12	<u>1</u>

D3536-35      Manufactured      No      270      Each      23.0000      1      1  
  
Gasket  
 BR 11-10-19.

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP012	23	
71587	13	<u>1</u>
72882 ✓	10	

D3536-39      Manufactured      No      270      Each      20.0000      1      1  
  
Gasket  
 BR 11-10-19.

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP015	20	
69760 ✓	20	<u>1</u>

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

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Page 5

Work Order ID: 73127

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 8/26/2011

Required Date: 9/9/2011

Start Qty: 1.00

Required Qty: 1.00

D3535-15 Manufactured No

270 Each

9.0000 1 1



Wearshoe

Location

Loc Qty

Loc Code

FP018 73006.  
69931

9

9

1

D3535-35 Manufactured No

270 Each

12.0000 1 1



Wearshoe

Location

Loc Qty

Loc Code

FP018 73311  
65926  
67598  
70815

12

1

1

10

1

D3535-39 Manufactured No

270 Each

19.0000 1 1



Wearshoe

Location

Loc Qty

Loc Code

FP018  
69759  
72159 ✓

19

6

13

1

D3535-23 Manufactured No

270 Each

18.0000 1 1



Wearshoe

Location

Loc Qty

Loc Code

FP021  
70818  
71581 ✓

18

8

10

1

BR 11-10-19.

BR 11-10-19.

BR 11-10-19.

BR 11-10-19.

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Page 5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Picklist Print

Friday, August 26, 2011 6:32:15 AM

Work Order ID: 73127

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 8/26/2011

Required Date: 9/9/2011

Start Qty: 1.00

Required Qty: 1.00

D3537-3 Manufactured No

270

Each

11.0000

1

1



Wearpad



BR 11-10-19.

Location

Loc Qty

Loc Code

FP

72144.

5

70481

5

FP017

6

35697

1

72686

5

1

D3537-1 Manufactured No

270

Each

66.0000

9

9



Wearpad



BR 11-10-19.

Location

Loc Qty

Loc Code

FP001

73395.

9

69530

9

FP016

50

68944

0

70687

50

FP017

7

69817

5

70686

2

9

AN960C10L \*<sub>R</sub> NAS1149C0332 / Purchased No

270

Each

0.0000

80

80



washer

118354



80.

BR 11-10-19.

AN960C416 \*<sub>R</sub> NAS1149C0463 / Purchased No

270

Each

0.0000

1

1



washer

117735



1

BR 11-10-19.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

Friday, August 26, 2011 6:32:15 AM

Page 7

Work Order ID: 73127

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 8/26/2011

Required Date: 9/9/2011

Start Qty: 1.00

Required Qty: 1.00

D3672-1 Manufactured No

270 Each

1,180.000 2 2



Phenolic Washer



BR 11-10-19

Location

Loc Qty

Loc Code

ST074

1178

64177

182

66821 ✓

496

72229

500

ST077

2

52505

2

AN3C4A Purchased No

270 Each

2,125.000 80 80



BOLT



BR 11-10-19

Location

Loc Qty

Loc Code

ST350

2125

117313

2

117688

36

117795

1

117872

22

118012

20

118112

40

118451 ✓

1000

118628

1004

AN4C5A Purchased No

270 Each

487.0000 1 1



BOLT



BR 11-10-19

Location

Loc Qty

Loc Code

FP-B

98

112243 ✓

98

ST345

389

112243

389

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Page 7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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# Picklist Print

Friday, August 26, 2011 6:32:15 AM

Page 8

Work Order ID: 73127



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 8/26/2011

Required Date: 9/9/2011

Start Qty: 1.00

Required Qty: 1.00

D2646

Manufactured No

270

Each

93.0000

1 1



Aft Cap



BR 11-10-19

## Location

## Loc Qty

## Loc Code

FP004

46

68280 ✓

46

FP006

5

62678

5

FP-4

38

70945

1

71070

37

fp5

4

71038

4

D3413-1

Manufactured No

270

Each

23.0000

1 1



Ring



BR 11-10-19

## Location

## Loc Qty

## Loc Code

ST420

23

73298

66387

1

70773

22

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**DART**

RELEASED

07.02.12

DEO ATTACHED

DESIGN <b>CP</b>	DRAWN BY <b>PH</b>	<b>DART AEROSPACE USA, INC.</b> PORT HADLOCK, WA	
CHECKED <b>[Signature]</b>	APPROVED <b>[Signature]</b>	DRAWING NO. D3274	REV. D SHEET 1 OF 4
DATE 06.12.19		TITLE SKIDTUBE ASSEMBLY	SCALE NTS
A	04.03.15	NEW ISSUE	
B	04.08.09	MOVE SADDLE HOLE: 42.14 WAS 42.76	
C	05.03.16	ADD -043; NEW INSERTS	
D	06.12.19	NEW INSERTS, SS WEARSHOE + GASKET	

Qty -041	Qty -043	Part Number	Description
X		D3274-041	SKIDTUBE ASSEMBLY
	X	D3274-043	SKIDTUBE ASSEMBLY
1	1	D2600-1-240	EXTRUSION
1	1	D2646	AFT CAP
12	12	D2649	CROSS BOLT SPACER
12	37	D3275-1	CROSS BOLT SPACER
1	1	D3282-041	FLOAT WEB
1	1	D3285-1	CAP
1	1	D3413-1	RING
1	1	D3415-041	NUT PLATE
1	1	D3535-15	WEARSHOE
1	1	D3535-23	WEARSHOE
1	1	D3535-35	WEARSHOE
1	1	D3535-39	WEARSHOE
1	1	D3536-15	GASKET
1	1	D3536-23	GASKET
1	1	D3536-35	GASKET
1	1	D3536-39	GASKET
9	9	D3537-1	WEARPAD
1	1	D3537-3	WEARPAD
78	78	ALS7-1032-130	INSERT (or AKS4-1032-130, ALS4-1032-130, AELS-1032-130)
80	80	AN3C4A	BOLT
1	1	AN4C5A	BOLT
1	1	AN960C416	WASHER
80	80	AN960C10L	WASHER
2	2	CCR264SS3-3	RIVET
2	2	CR3212-4-03	RIVET
2	2	NAS1515H3L	WASHER

## GENERAL NOTES:

1. TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
2. DAMAGE TOLERANCE ON FWD BEND:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 7 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
3. ALL HOLES DRILLED ON CENTERLINES.
4. BOND D3282-041 FLOAT WEB INTO D3274-1/-3 OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/291 ADHESIVE PER DART QSI 015. ENSURE HOLES LINE-UP.
5. WELDING TO BE DONE PER DART QSI 004.
6. FINISH: - ACID ETCH, ALODINE ASSEMBLY PER DART QSI 005 4.1  
- POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
7. DRILL Ø0.297 HOLES FOR ALS7-1032-130 INSERTS USING DT3274-1T2 BEFORE FINISH. INSTALL ALS7-1032-130 INSERTS AFTER FINISH. SEAL WEARSHOE BOLTS WITH SIKAFLEX -241/-291.
8. SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY. CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

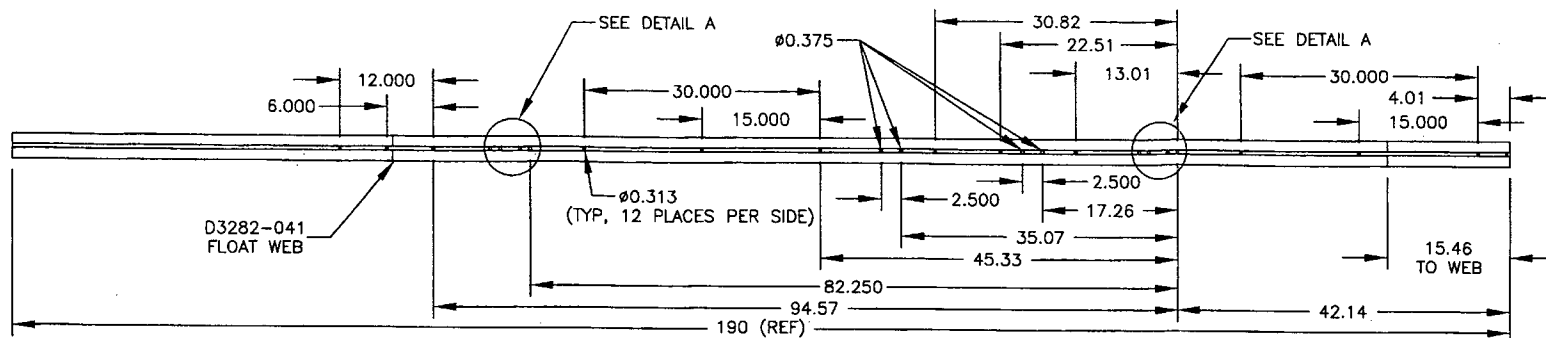
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

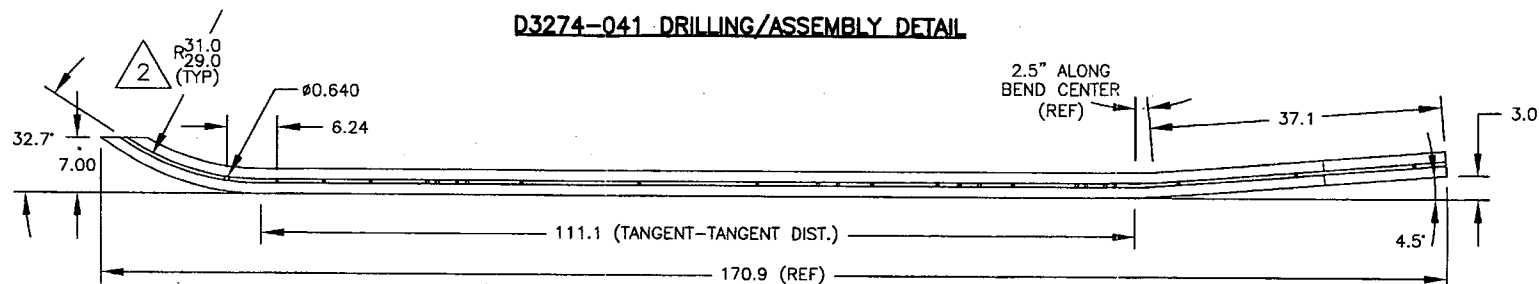
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

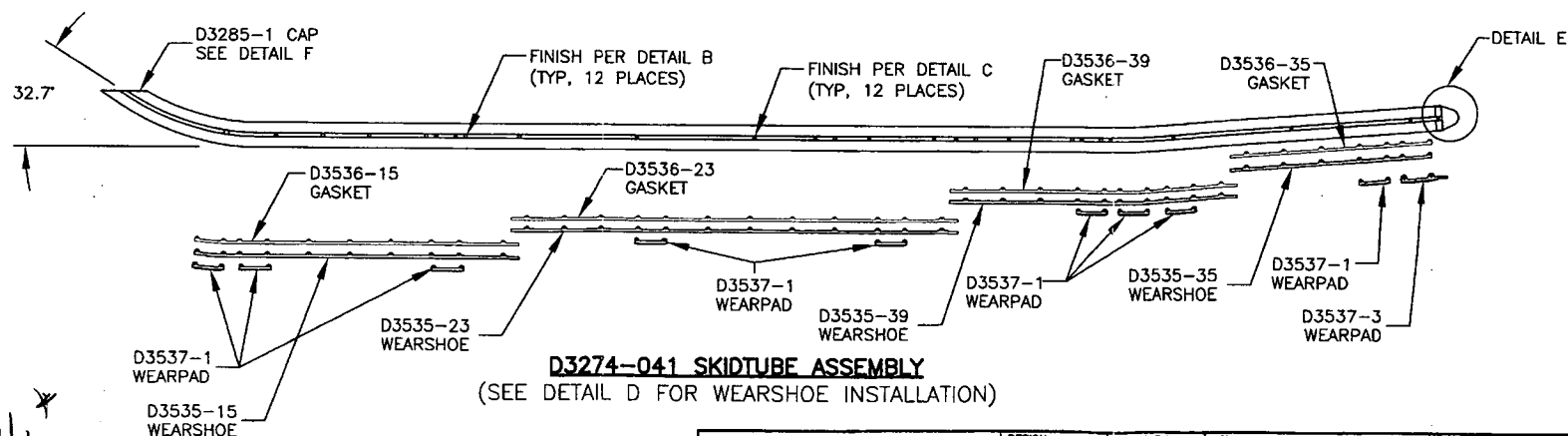
DEO ATTACHED



**D3274-041 DRILLING/ASSEMBLY DETAIL**



**D3274-041 BEND/DRILLING DETAIL**



**D3274-041 SKIDTUBE ASSEMBLY**  
(SEE DETAIL D FOR WEARSHOE INSTALLATION)

RELEASED

07.02.12

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CHECKED	APPROVED	DATE	TITLE	SHEET 2 OF 4	
		06.12.19	SKIDTUBE ASSEMBLY	SCALE 1:15	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

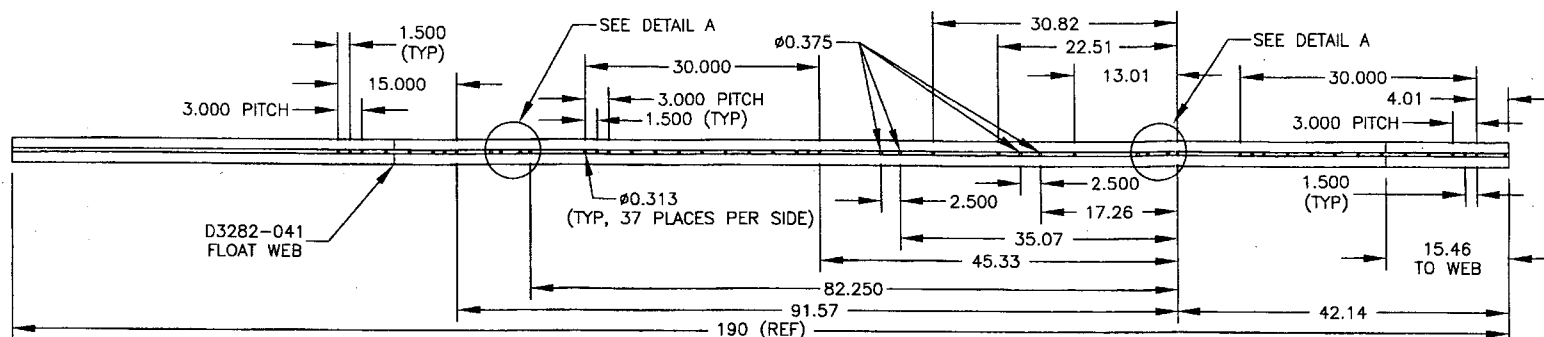
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

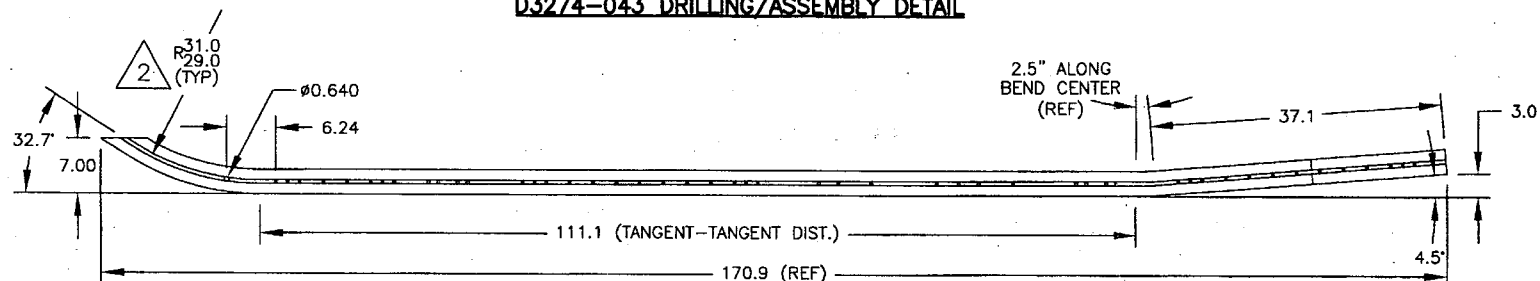
**NOTE:** Date & initial all entries



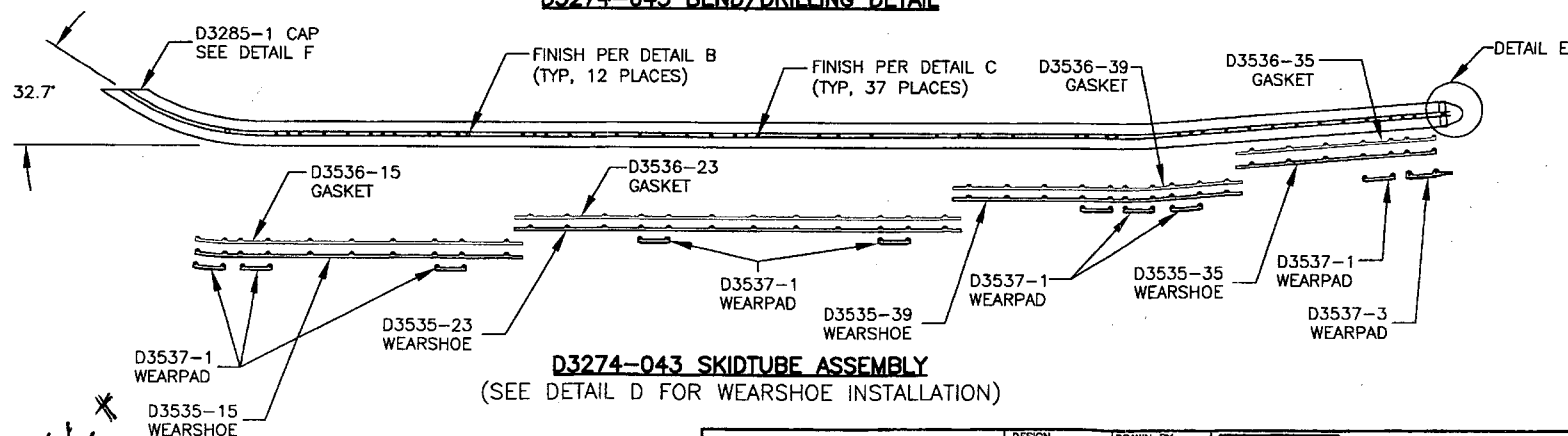
DEO ATTACHED



D3274-043 DRILLING/ASSEMBLY DETAIL



D3274-043 BEND/DRILLING DETAIL



D3274-043 SKIDTUBE ASSEMBLY  
(SEE DETAIL D FOR WEARSHOE INSTALLATION)

RELEASED

07.02.12

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CHECKED	DATE	CP	PH	DRAWING NO.	REV. D
#	06.12.19	#	#	D3274	SHEET 3 OF 4
TITLE				SCALE	
SKIDTUBE ASSEMBLY				1:15	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

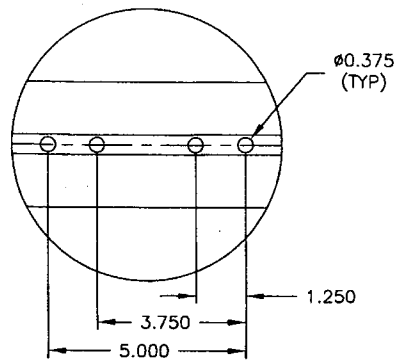
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

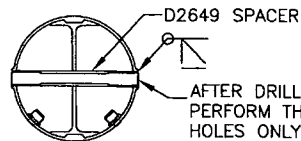
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# **DETAIL A: DRILL DETAIL**

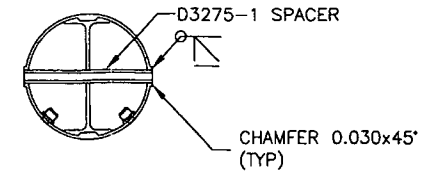


# **DETAIL B** FOR 0.375 HOLES ONLY

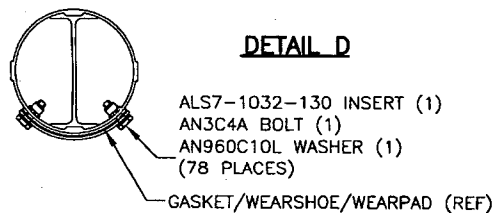


- AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR 0.375  
HOLES ONLY:
1. CHAMFER HOLE 0.030x45°
  2. INSERT D2649 SPACER
  3. WELD INTO PLACE AND GRIND FLUSH
  4. C'BORE TO 0.313x0.75 DEEP

# **DETAIL C** FOR 0.313 HOLES ONLY



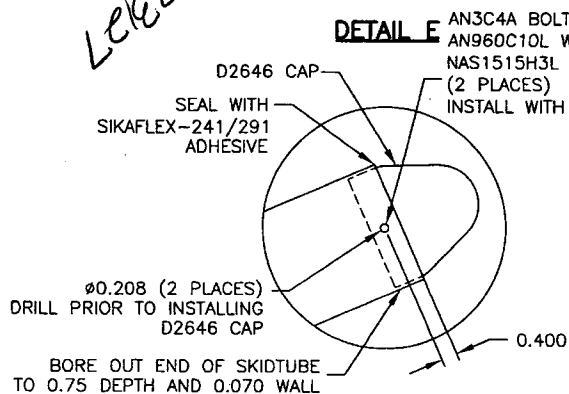
# **DETAIL D**



- ALS7-1032-130 INSERT (1)  
AN3C4A BOLT (1)  
AN960C10L WASHER (1)  
(78 PLACES)

GASKET/WEARSHOE/WEARPAD (REF)

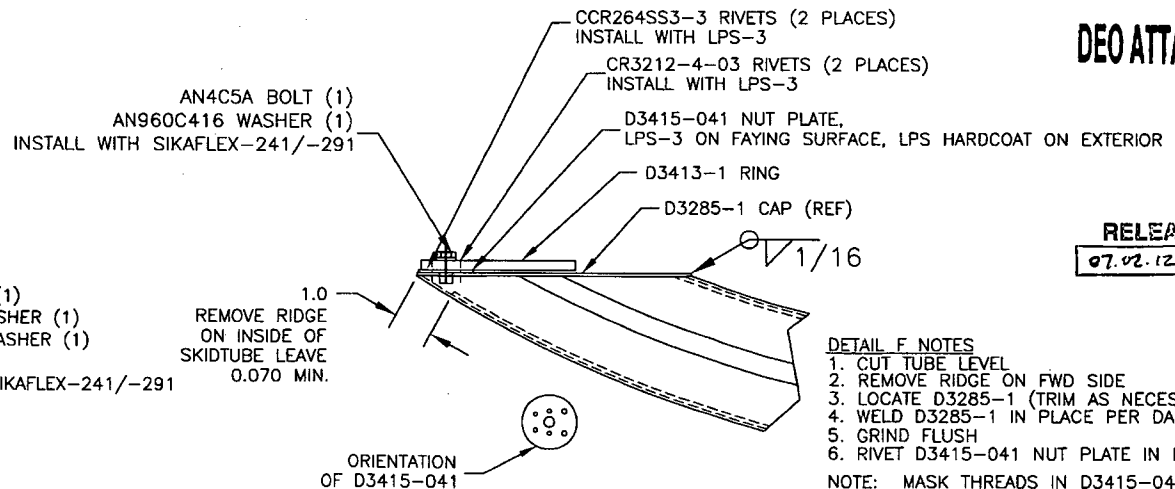
# **DETAIL E**



- AN3C4A BOLT (1)  
AN960C10L WASHER (1)  
NAS1515H3L WASHER (1)  
(2 PLACES)  
INSTALL WITH SIKAFLEX-241/-291

SEAL WITH  
SIKAFLEX-241/291  
ADHESIVE

# **DETAIL F: END FINISHING DETAIL**



- CCR264SS3-3 RIVETS (2 PLACES)  
INSTALL WITH LPS-3  
CR3212-4-03 RIVETS (2 PLACES)  
INSTALL WITH LPS-3  
D3415-041 NUT PLATE,  
LPS-3 ON FAYING SURFACE, LPS HARDCOAT ON EXTERIOR  
D3413-1 RING  
D3285-1 CAP (REF)

REMOVE RIDGE  
ON INSIDE OF  
SKIDTUBE LEAVE  
0.070 MIN.

ORIENTATION  
OF D3415-041

**DEO ATTACHED**

**RELEASED**  
07.02.12

- DETAIL F NOTES**
1. CUT TUBE LEVEL
  2. REMOVE RIDGE ON FWD SIDE
  3. LOCATE D3285-1 (TRIM AS NECESSARY)
  4. WELD D3285-1 IN PLACE PER DART QSI 004
  5. GRIND FLUSH
  6. RIVET D3415-041 NUT PLATE IN PLACE
- NOTE: MASK THREADS IN D3415-041  
PRIOR TO FINISH

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CHECKED #	APPROVED #	DRAWING NO. D3274		REV. D SHEET 4 OF 4	
DATE 06.12.19		TITLE SKIDTUBE ASSEMBLY		SCALE 1:3	

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

DRAWING NO. D3274	TITLE SKIDTUBE ASSEMBLY	REV. D	DART AEROSPACE USA, INC ENGINEERING ORDER	D.E.O. NO. D3274-D-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>CP</i>	CHECKED <i>[Signature]</i>	MFG. APPR. <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DE APPR. <i>[Signature]</i>		
DATE 09.06.17	DATE 09.06.23	DATE 09/06/23	DATE 09/06/23	DATE 09.06.23		

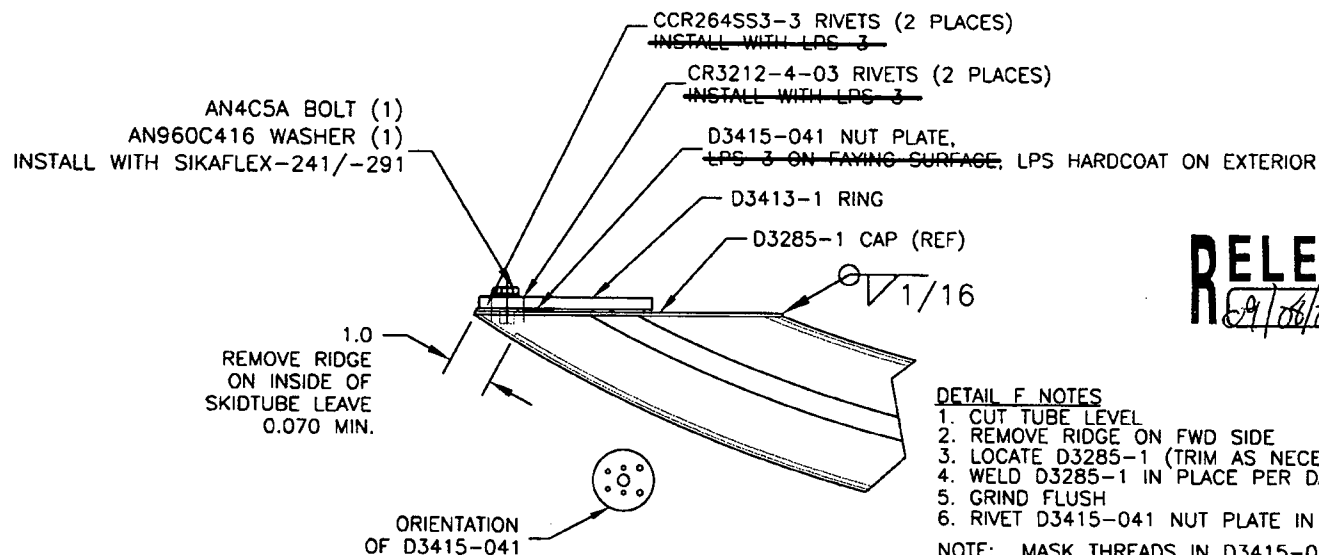
LPS-3 IS NO LONGER USED DURING ASSEMBLY OF SKIDTUBE.

AMEND NOTE 8: ~~"SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES 'LPS 3' AFTER FINISH AND INSTALLATION OF INSERTS.~~  
COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES 'LPS PROCYON' AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF  
POWDER COATING WITH MEK DEGREASER."

AMEND DETAIL F AS SHOWN:

47327

### DETAIL F: END FINISHING DETAIL



RELEASED  
09/06/23

- DETAIL F NOTES
1. CUT TUBE LEVEL
  2. REMOVE RIDGE ON FWD SIDE
  3. LOCATE D3285-1 (TRIM AS NECESSARY)
  4. WELD D3285-1 IN PLACE PER DART QSI 004
  5. GRIND FLUSH
  6. RIVET D3415-041 NUT PLATE IN PLACE
- NOTE: MASK THREADS IN D3415-041  
PRIOR TO FINISH

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

NO. 272

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barclay Elliott  
Job number: 73871  
Part number: D 206-1042-151  
Description: 206 skid tube  
Welding Process: Tig ☒ Mig ☐  
Base material: Aluminum  
Current: AC ☒ DC ☐

TEST REQUIREMENTS AND RESULTS

Visual: pass ☒ fail ☐  
Penetration: pass ☒ fail ☐

UNACCEPTABLE

Cracks: pass ☒ fail ☐  
Undercut: pass ☒ fail ☐  
Pin holes: pass ☒ fail ☐  
Overlap (cold lap): pass ☒ fail ☐  
Porosity (surface): pass ☒ fail ☐  
Coloration: pass ☒ fail ☐

Qualifier Sal Dur Date of Test Coupon 11-10-12  
Welder Barclay Elliott Date of Test Coupon 11-10-12

The above named individual is qualified in accordance with AWS D17.1.2001 to weld